UNITED STATES DEPARTMENT OF THE INTERIOR
Bureau of Land Management
Northeastern States District Office
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FINDING OF NO SIGNIFICANT IMPACT

for Expression of Interest ES00002496, Kalamazoo County, Michigan

DOI-BLM-Eastern States-M000-2022-0010-EA

INTRODUCTION:

The Bureau of Land Management (BLM) completed an environmental review DOI-BLM-Eastern States-M000-2022-0010-EA prepared for Expression of Interest ES00002496, Kalamazoo County, Michigan to address the nomination and offering of an oil and gas lease parcel at the June 2023 Competitive Oil and Gas Lease Sale. The selected alternative is the Proposed Action – not the No Action alternative – as described in Section 2.2 of the attached environmental assessment (EA). Under the Proposed Action, the BLM would offer for lease one parcel totaling approximately 40 acres of Federal minerals administered by the BLM underlying private surface estate. Should a successful bid be received, and all other applicable requirements met, the BLM may lease the parcel. Recommended best management practices (BMPs) and stipulations (Appendix D), as provided for by law, have been attached to the parcels as specified in the EA.

FINDING OF NO SIGNIFICANT IMPACT:

Based on my review of the attached EA and supporting documents, I have determined that the selected alternative, the Proposed Action, is not a major federal action and will not significantly affect the quality of the human environment. Therefore, an environmental impact statement (EIS) is not required. This finding is based on the degree of the effects described in the following sections within the identified affected environment.

Potentially Affected Environment (40 CFR § 1501.3(b)(1))

The project is a site-specific action directly involving BLM-administered subsurface mineral estate underlying private surface in Kalamazoo County, Michigan that does not inherently have international, national, regional, or state-wide importance. The surface of the approximately 40-acre proposed lease parcel is occupied by cultivated crops (approximately 31 acres), woody wetlands (approximately 7 acres), and one acre of development. Although no surface disturbance would be permitted by leasing a parcel, the EA utilizes Reasonably Foreseeable Development Scenario (RFDS) (Appendix B) to address the potential environmental effects from future oil and gas development that would likely occur but are unknown in specific detail at this time. It is reasonable to predict oil or gas would be produced at a future date because of the receipt and approval of an Application for Permit to Drill (APD). The BLM used a 4-mile assessment area of

over 35,000 acres surrounding the proposed lease parcel to account for possible horizontal (unconventional) wells drilled from beyond the subject parcel but potentially extending into the parcel in the subsurface.

Based on the RFDS, each well pad could accommodate either a single vertical well or up to three horizontal wells. Surface disturbance is estimated to be 3.4 acres for each vertical well pad (or about .04% of the four-mile assessment area) and 4.32 acres for each horizontal well pad (about .06% of the four-mile assessment area). If two vertical wells are drilled and become productive, it would increase the number of producing oil or gas wells in the four-mile assessment area by approximately 11% and if six horizontal wells become productive by approximately 33%. Within the four-mile assessment area. the predominate land covers are cultivated crops, woody wetlands, and deciduous forest. The nominated parcel is located within the Indian Lake- Portage River Watershed. There are a little over 100 stream miles and 7,545 acres of wetlands within the four-mile assessment area. Potential habitat for the northern long-eared bat (*Myotis septentrionalis*), Indiana bat (*Myotis sodalist*), tricolored bat (*Perimyotis septentrionalis*), copperbelly water snake (*Nerodia erythrogaster neglecta*), eastern massasauga rattlesnake (*Sistrurus catenatus*), snuffbox mussel (*Epioblasma triquetra*), Mitchell's satyr butterfly (*Neonympha mitchellii mitchellii*), monarch butterfly (*Danaus plexippus*), and numerous species of migratory birds can occur within the four-mile assessment area.

Degree of Effects (40 CFR § 1501.3(b)(2))

The following have been considered in my evaluation of the selected alternative:

i. Short- and long-term effects

The interdisciplinary team evaluated the Proposed Action in context of short- and long-term effects in consideration of other past, present, and reasonably foreseeable actions. Significant effects from the Proposed Action in consideration of baseline environmental conditions are not expected. There are no surface-disturbing activities authorized at the leasing stage, although short- and long-term effects on resources from reasonably foreseeable future development are discussed in Chapter 3 of the EA. If no subsequent development operations are conducted, there will not be short- or long-term effects.

Development of oil and gas through construction, drilling, and other operations on the proposed lease sale parcel could occur in the future, resulting in effects. It is uncertain at the time of leasing whether the lands will be leased and, if leased, it is difficult to predict the nature of potential future lease exploration and development operations. The Proposed Action would give the lessee exclusive rights to explore and develop oil and gas reserves on the lease but does not in itself authorize surface disturbing activities. Estimates of potential future well development and production are intended as an analytical baseline for identifying and quantifying direct, indirect, and cumulative effects of oil and gas activity, as outlined in the RFDS, and have been considered for analysis in this EA and imply no guarantee of lease issuance or subsequent development.

As described in the EA, effects to the human environmental can be either short-term or long-term. Short-term effects would last the duration of the construction phase and through a portion of the operation period.

In general, short-term adverse effects to the following resources would occur:

Human health and safety – Short-term human health effects (noise, light pollution, aesthetics, traffic, and odors) to the local community are described in Section 3.3.2.2 of the EA in the following ways:

- Noise - Drilling can cause excessive noise, particularly in rural areas like where the proposed lease parcel is located. However, these effects are most prevalent during the first two to thirty days of the development of the well, during the drilling and fracking phases. It will typically take one month, but potentially up to three months, to drill and complete an oil or gas well. The Michigan Department of Environmental Quality (MDEQ) requires drill site supervisors to monitor for potential nuisance noise levels and take appropriate mitigation measures, such as mufflers, or the use of sound absorbent materials around noise-emitting machines. Once wells go into production, noise levels from activities at the well pad(s) would drop off significantly.

- Light Pollution - Light pollution effects would be particularly noticeable in areas where oil and gas development has not occurred previously or is encountered infrequently. To mitigate light effects, the MDEQ imposes permit conditions on lighting and screening on a case-by-case basis. If night light is necessary, the recommended Best Management Practices (BMPs) would include using low pressure sodium light sources when possible, directed to point downwards, and to be shielded.

- Aesthetics - Well pads, drill rigs, storage tanks and other structures would be visible to local residences and along any roadway near a site. As the analysis area is predominantly rural, any facilities developing oil or gas would stand out. Once a well goes into production, the drill rig would leave the site, truck traffic to the well pad would reduce significantly and interim reclamation activities would commence, thus reducing visual effects.

- Traffic - The number of heavy trucks needed during a hydraulic fracturing operation depends on the number of wells and well pads established at a site. The RFDS projects two well pads and potentially up to three wells on each pad. An estimated 3,950 one-way truck trips (with 1,148 of those being heavy, fully loaded trucks) may be required for a newly created well and well pad. This estimate is for a horizontal drilling hydraulic fracturing operation requiring approximately 5 million gallons of water. The availability and location of water will also affect the amount of truck traffic within the assessment area. Drill sites that can withdraw from nearby groundwater wells would reduce the number of heavy trucks needed for water hauling and produced water disposal by nearly 85%. Once the wells are placed into production, the operator eventually limits visits to the well site to weekly, then bi-weekly, and then occasionally for infrequent workover (well stimulation) operations. To address potential short-term effects from the increase in truck/vehicle traffic to a well site, a Road Maintenance Agreement may be required, which is an agreement between the company and the county or local township, that would include proposed truck routes, evidence of complying with weight limits posted on roads, and would ensure road repairs if damage occurs from their operations.

- Odors – Oil and gas drilling and production activities create odors. These odors will be most prevalent in the first thirty days of developing a well, during the drilling and hydraulic fracturing phases. Well spacing requirements in Michigan are designed to prevent the same location from being continuously or repeatedly exposed to the same pollutants. MDEQ requires the drill site supervisor to prevent regular or recurring nuisance odors in the exploration for or development, production, or handling of gas.

Groundwater quantity - Groundwater withdrawals are addressed in Section 3.4.3 of the EA. Short-term effects include groundwater withdrawn for drilling and/or hydraulic fracturing reduces water available for other uses such as water for agriculture, community and private wells, aquatic habitats, watershed heath and surrounding ecosystems such as freshwater wetlands. Hydraulic fracturing of a well would require a large quantity water withdrawal (LQWW). Registration of all LQWW and use of the Water Withdrawal Assessment Tool (WWAT) is required in the State of Michigan. New LQWW are not allowed to create adverse resource effects, which are defined for each unique category of water body.

To evaluate a proposed withdrawal, WWAT considers well depth, aquifer characteristics, distance from nearby streams, and pumping rate and frequency to estimate stream-aquifer interactions. The WWAT distributes the estimated effects of well pumping among neighboring streams based on distance. Additionally, the BLM, under Onshore Oil and Gas Order No. 2, and the Michigan Department of Environment, Great Lakes, and Energy (EGLE) require the use of casing and cementing to isolate the well from any potentially drinkable water-bearing formations. Michigan Administrative Code Rule R 324.408 requires surface casing to be set 100 feet below the base of glacial drift into competent bedrock and 100 feet below all freshwater strata.

Surface and groundwater quality – As described in Section 3.5.2.2 of the EA, short-term effects to surface and groundwater may include wastewater disposal from high volume hydraulic fracturing operations, which use millions of gallons of water mixed with proppant and chemicals in hydraulic fracturing fluid, and could have negative consequences to both surface and groundwater sources for drinking water quality, aquatic habitat, and wildlife health if it were released into those sources. Drilling to a production zone that is below a potable water-bearing aquifer poses the risk of allowing brine and other chemicals to migrate up into a potable water zone. Pursuant to the Clean Water Act, wastewater cannot be discharged into the surface waters and the wastewater would need to be captured for reuse and/or sent to a publicly owned treatment works. In Michigan, flowback fluids are captured in steel tanks and either recycled for further hydraulic fracturing operations or ultimately disposed in deep injection wells that are permitted by MDEQ specifically for that purpose and are protective of freshwater resources.

MDEQ requires spill response procedures for responding to and cleaning up spills along with having the necessary equipment for spill cleanup readily available to personnel on the well site.

Vegetation – Future short-term direct effects would primarily be caused by clearing activities associated with the development of a well pad and associated access roads and truck traffic, with potentially up to 4.8 acres of upland vegetation clearing for access road construction and drill pad development as described in the RFDS and in Section 2.2.1 of the EA. Indirect effects to vegetation from project activities would be minor and result from ground-disturbing project

activities as described in section 2.2.1 of the EA. Effects to existing vegetation communities from drill pad and access road development are expected to be minor, localized, and temporary. These areas would be restored and revegetated following recommended interim and final reclamation measures described in Section 2.2.1 of the EA.

Wildlife - Short-term effects to terrestrial wildlife populations would result from potential future drilling activities as described in section 3.6 of the EA. Given the limited extent of the affected area, measurable effects are not anticipated. Direct effects to wildlife habitat may include noise associated with drilling operations if an APD is approved. Such noises could affect wildlife, including the disturbance of bats and migratory birds. Bats are known to relocate if they are bothered by sound. If the disturbance is around the clock, such as during the one to three months of well drilling and completion activities, the bats or other wildlife may adjust to the noise and perceive it as ambient, as described in section 3.6.2.2 of the EA. Existing lease stipulations described in Appendix D and recommended environmental protection design features described in section 3.6.2.3 would be implemented to protect wildlife habitat in the Project Area.

Long-term effects would last until the completion of operations and or beyond the end of operations. Long-term effects to the following resources would occur:

Air Quality/Greenhouse Gas Emissions - Effects to State, regional and national air quality are expected to last for the productive life of a well (30 years) and result from emissions that would be emitted from the leased parcel if developed and from the consumption of any fluid minerals that may be produced, as described in Sections 3.1 and 3.2 of the EA. However, regulated air pollutant emissions from the project are not anticipated to exceed the threshold for a Prevention of Significant Deterioration (PSD) review for ambient air quality effects. The following cumulative effects to air quality/greenhouse gases are estimated based on the RFDS in Appendix B and Section 3.1.3 in the EA:

- State long-term effects - The total air pollutant emissions from the Proposed Action would represent a maximum increase of 0.9 percent above the maximum cumulative direct annual air pollutant emissions, if multiple oil and/or natural gas wells were developed on all effective Michigan Federal mineral leases. The emissions from the Proposed Action are minute compared to the maximum cumulative air pollutant emissions for all Federal mineral leases in Michigan.

- Regional long-term effects – The region includes the Federal mineral estate within lands administered by the BLM Northeastern States District Office (NSDO) and includes the following states: Connecticut, Delaware, Illinois, Indiana, Iowa, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Rhode Island, Vermont, West Virginia, and Wisconsin. The total air pollutant emissions from the Proposed Action would represent a maximum increase of 0.3 percent above the maximum cumulative direct annual air pollutant emissions if multiple oil and/or natural gas wells were developed on all effective Federal mineral leases within the NSDO. The emissions from the Proposed Action are minute compared to the maximum cumulative air pollutant emissions for all Federal mineral leases in the NSDO.

- National long-term effects - The total air pollutant emissions from the Proposed Action would represent a maximum increase of 0.002 percent above the maximum cumulative direct annual air pollutant emissions, if multiple oil and/or natural gas wells were developed on all effective Federal mineral leases within the United States. The emissions from the Proposed Action are minute compared to the maximum cumulative air pollutant emissions for all Federal mineral leases in the United States.

Soils - The effects from future development could include erosion by wind and/or water, topsoil removal, exposure of subsoil, mixing of soil horizons, compaction, and loss of soil productivity as described in section 3.9.2.2 of the EA. There could be an increase in soil surface water runoff and an increased sediment load in streams. To mitigate effects, certain well pad locations may be preferable to minimize damage to local soils. If the lease is developed, it would be developed on private lands. The BLM may encourage appropriate well siting locations, BMPs and/or design features at the APD stage (per 43 CFR 3101.1-2) that mitigate effects to soil and water resources. Additionally, once vegetative cover is established during and after restoration of the drill sites and access roads, erosion rates would decline over the long-term. Therefore, effects to soil resources would be long-term but minor given the relatively small area of disturbance. Surface disturbance is estimated to be 3.4 acres for each vertical well pad (or about .04% of the four-mile assessment area) and 4.32 acres for each horizontal well pad (about .06% of the four-mile assessment area).

Socioeconomics - As described in section 3.8 of the EA, the direct economic impact of issuing the new oil and gas lease would be generation of revenue from the lease sale's rental fees for the first 5 lease years and from royalties after the initial 5 lease years. Indirect effects that might result, should exploration or development of the lease occur, include increased employment opportunities related to the oil and gas and service support industries in the region as well as the economic contributions to federal, state, and county governments from severance and property taxes. For all phases, such as exploration, development, and production, the contribution of potential future development to the regional economy would depend on many factors, such as the level of production anticipated, the revenue generated per well, and the size of crews and the infrastructure or support facilities, if any, needed for oil and gas exploration and development activities, such as those related to access road construction. It has been determined these effects would not be significant based on the estimate of potential wells drilled and developed in the RFDS.

ii. Beneficial and adverse effects

The Proposed Action would affect resources as described in the EA. The beneficial effects of oil and gas production are discussed in Section 3.7 of the EA; these include the production of fossil fuels to contribute to the national, state, and local supply in response to public demand. In addition, issuance of the lease and potential future development of the lease has economic effects on local, state, regional and national social and economic conditions, which may be perceived as either positive or negative, depending on the standpoint of a stakeholder. None of the environmental effects discussed in detail in the EA are considered significant.

This EA has disclosed potential adverse effects to climate change through several methods such as quantifying, as far as practicable, the reasonably foreseeable GHG emissions and social cost

of GHG emissions (SC-GHG) as a proxy for assessing climate effects. As discussed in Section 3.2 of the EA, compared to emissions from other existing and foreseeable short-term Federal oil and natural gas development, the life of lease emissions for the Proposed Action is 10.608% of Federal fossil fuel authorization emissions in the state and between 0.001% to 0.002% of Federal fossil fuel authorization emission in the nation. If foreseeable "long-term" Federal oil and natural gas development and production remains a constant percentage of EIA projected energy demand, then the estimated emissions from the life of leases in the Proposed Action is between 0.001% and 0.004% of Federal emissions in the nation over the next 30 years. In summary, potential GHG emissions from the Proposed Action could result in GHG emissions of 0.171 MT CO_2e over the life of the lease.

Using these figures, therefore, the SC-GHG from the Proposed Action is estimated to range from $2,074,000 to $23,619,000. There are no established thresholds for NEPA analysis to contextualize the quantifiable GHG emissions or social cost of an action in terms of the action's propensity to affect the climate, incrementally or otherwise. However, the BLM acknowledges that all GHGs contribute incrementally to the climate change phenomenon and has tried to display the GHG emissions and SC-GHG in the EA in comparison to commonly understood emissions sources such as motor vehicles and home heating equipment. Due to the cumulative and global nature of climate change, it is not possible for the BLM to determine whether the emissions associated with the Proposed Action would have a "significant" or "non-significant" effect on the human environment. However, preparation of an EIS solely for the sake of analysis of the issue of climate change is not warranted as any disclosure in such an EIS would be the same as that prepared for this EA and would not better inform decision makers or the public.

iii. Effects on public health and safety

In addition to the BLM, local, State, and other Federal agencies regulate oil and gas exploration and drilling operations to protect public health and safety. The BLM will continue to coordinate with other local, State, and Federal agencies. Human health short- and long-term effects are discussed under part ii. of this FONSI and were not determined to be significant. No other aspect of the Proposed Action would have an effect on public health and safety. If the parcel is subsequently leased and actual operations proposed, public health or safety would be addressed in more detail through additional site-specific analysis and in compliance with State and Federal laws and regulations, as required.

iv. Effects that would violate Federal, State, Tribal, or local laws protecting the environment

Consultations with other Federal and State agencies and Tribal governments are documented in the EA in Section 4.1. The project does not violate any known Federal, State, local, or tribal law or requirement imposed for the protection of the environment. In addition, the project is consistent with the Michigan Resource Management Plan, other policies and programs.